

## **APPEAL BRIEF**

<b>Applicant:</b>	KIA SILVERBROOK
<b>Application No.:</b>	10/729,157
<b>Filing Date:</b>	12 AUGUST 2003
<b>Title of the Invention:</b>	A PRINthead ASSEMBLY FOR A PRINT ON DEMAND DIGITAL CAMERA SYSTEM
<b>Examiner:</b>	JUSTIN P. MISLEH
<b>Class</b>	348
<b>Art Unit:</b>	2622

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## **REAL PARTY IN INTEREST**

The real party in interest is SILVERBROOK RESEARCH PTY LTD, the assignee of record.

## **RELATED APPEALS AND INTERFERENCES**

None

## STATUS OF CLAIMS

Claim	Status
1	Rejected
2	Cancelled
3	Rejected
4	Rejected
5	Rejected
6	Rejected
7	Cancelled
8	Rejected
9	Rejected
10	Rejected

## **STATUS OF AMENDMENTS**

The claims have not been amended after the final rejection dated July 20, 2009. The claims as pending and as submitted for appeal are as received by the USPTO on January 18, 2009.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

The claimed invention as defined by independent claim 1 is directed to a printhead assembly for a camera system (1 - Fig. 1). The printhead assembly of the claimed invention is depicted for example in Fig. 13 of the specification. The printhead assembly comprises an elongate ink reservoir assembly (42 - Figs. 5 - 7, and 13; p. 5, ln. 8 - 13; p.7, ln. 31 - 32) defining at least three ink reservoirs (104, 105, 106 - Fig. 13; p. 7, ln. 32 - 33). Each of the at least three ink reservoirs spans a width of the printing path, as shown in Fig. 13.

The printhead assembly of the claimed invention further comprises a guide assembly (124, 125 - Fig. 14; p. 8, ln. 1 - 6) positioned in the ink reservoir assembly. The guide assembly defines at least three discrete ink paths facilitating fluidic communication between each of the at least three ink reservoirs (104, 105, 106 - Fig. 138; p 8, ln 1 - 6) and an outlet (128 - Fig. 14; p 7, ln. 34 - 35) of the elongate ink reservoir assembly.

The printhead assembly of the claimed invention still further comprises at least one printhead integrated circuit (102 - Figs. 13 and 14) positioned at the outlet (128 - Fig. 14) of the elongate ink reservoir assembly. The at least one printhead integrated circuit substantially spans a width of the printing path.

## **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1. Whether claims 1, 3 - 5, and 8- 10 are unpatentable under 35 U.S.C. 103 over Suzuki (US 5,847,836) in view of Yuen (US 7,347,863).
2. Whether claim 6 is unpatentable under 35 U.S.C. 103 over Suzuki (US 5,847,836) in view of Yuen (US 7,347,863) and further in view of official notice as supported by Baldwin et al. (US 5,600,358).



## ARGUMENTS

### (1) REJECTION UNDER 35 U.S.C. 103(a) OVER SUZUKI (US 5,847,836) IN VIEW OF YUEN (US 7,347,863)

#### **CLAIMS 1, 3 - 5, 8 AND 10**

In the Final Office Action dated 20 July, 2009, independent claim 1 is rejected over the combination of Suzuki and Yuen. One of the assertions made by the rejection is that Suzuki discloses the claimed *“elongate ink reservoir assembly defining...ink reservoirs...spanning a width of the printing path”* (page 4, item 8 of Final Office Action).

In raising this rejection, the Examiner refers to the disclosure of Suzuki at col. 16, lines 17 - 24, and lines 43 - 48 (page 4, item 7 of Final Office Action). This portion of Suzuki states that the printhead used in the device of Suzuki may be a full line type printhead.

Additionally, whilst not referred to by the Examiner, Applicant also notes that Suzuki states at lines 25 - 30 that that the printhead may be a cartridge type printhead in which the ink tank is “integrally arranged” on the printhead itself.

From the above disclosure of Suzuki, the Examiner asserts at page 4, item 8 of Final Office Action that there is “clear evidence” that Suzuki teaches *“an elongate ink reservoir assembly defining...ink reservoirs...spanning a width of the printing path”*. Applicant respectfully disagrees.

As was previously submitted by Applicant (in the response of April 23 2009; page 3, paragraph 5), Suzuki describes only that the printhead used in the device may be a pagewidth printhead, and that an ink tank for the printhead may be integrally arranged on the printhead itself. Applicant notes that Suzuki is otherwise silent as to the ink tank itself spanning a width of the printing path, or to any other characteristic of the ink tank.

The disclosure of Suzuki regarding the printhead being a full line printhead, and that the ink tank being integrally arranged on the printhead, is respectfully submitted to be insufficient to prejudice the novelty and inventiveness of claims 1, 3 - 5, 8 and 10. In particular, the feature of the ink reservoir assembly defining at least three discrete ink reservoirs, which at least three ink reservoirs each span a width of the printing path is not taught or suggested by Suzuki. Suzuki makes no mention about a size and arrangement of the ink tank with respect to the printhead, other than to state that it is “integrally arranged” on the printhead.

Applicant points out that a pagewidth printhead spanning a width of a printing path, by itself, does not teach or suggest that an ink reservoir for the pagewidth printhead also spans a width of the printing path. Applicant respectfully submits that the Examiner’s extrapolation of the mere use of a pagewidth printhead in Suzuki to arrive at the conclusion that Suzuki provides “clear evidence” for an elongate ink reservoir spanning a width of the printing path is based on improper hindsight reasoning, and relies on Applicant’s own disclosure.

With reference to the secondary reference of Yuen, the Examiner asserts (page 5, item 10; and page 8, para. 3 of Final Office Action) that Yuen discloses an ink reservoir assembly (50 - Fig. 3) with three ink reservoirs (16, 18, and 20), wherein each of the three ink reservoirs (16, 18, and 20) spans the entire width of the ink reservoir assembly (50 - Fig. 3). In combination with the alleged teachings of Suzuki, the Examiner concludes that:

*“Thus, if the print cartridge taught by Yuen were used in Suzuki’s printhead assembly, the combined teachings yield Applicant’s invention as recited in Claim 1. In other words, Suzuki already teaches a printer cartridge that spans the width of the printing path, where the printer cartridge has a plurality of ink reservoirs. Yuen shows a printer cartridge with exactly three ink reservoirs that occupy the whole width of the printer cartridge. At the time the invention was made, the Examiner respectfully submits that one with ordinary skill in the art would have combined the teaching of Yuen with Suzuki to form a printer cartridge/assembly that spans the width of the printing path and*

*contain at three ink reservoirs [sic]. For these reasons, the Examiner maintains the rejection of the claims.”*

Applicant respectfully submits that this conclusion is untenable.

Firstly, Applicant clarifies for the Board that element 50 of Yuen refers to an ink container (Yuen - col. 2, line 24) as opposed to a “printer cartridge” as asserted by the Examiner. It should be especially noted that the ink container (50) of Yuen contains only ink, and does not include a printhead. In a technical context, one of ordinary skill in the art would correspond the ink container (50) to the ink tank of Suzuki. Accordingly, if relying on all available disclosure regarding the ink tank of Suzuki, the ink container (50) of Yuen may be “integrally arranged” on the pagewidth printhead of Suzuki. However, exactly how the ink container (50) is arranged on the pagewidth printhead of Suzuki, and whether or not the ink container (50) would also span a width of the printing path, is not taught or suggested by either Suzuki or Yuen.

Next, it is noted that Yuen also fails to teach or suggest that the reservoirs (16, 18, and 20) of the ink container (50) spans a width of the printing path. Applicant particularly notes that the Examiner states only that “*Yuen shows a printer cartridge with exactly three ink reservoirs that **occupy a whole width of the printer cartridge***” [emphasis added]. This alleged teaching of Yuen still does not teach or suggest the claimed feature of ink reservoirs spanning a width of the **printing path**. In Yuen, since the ink container (50) does not span a width of the printing path, it follows that even though the ink reservoirs (16, 18, and 20) span a width of the ink container (50), the ink reservoirs (16, 18, and 20) still would not span a width of the printing path.

In view of the above, Applicant respectfully submits that the combination of Suzuki and Yuen would not have arrived at the claimed invention, and that the Examiner’s above reasoning is flawed.

The combined teachings of Suzuki and Yuen may be summarised as follows:

1. A pagewidth printhead spanning a width of the printing path may be used (Suzuki).
2. An ink tank maybe be integrally arranged on the pagewidth printhead (Suzuki).
3. The ink tank may have three ink reservoirs (Yuen).
4. Each of the three ink reservoirs may span a width of the ink tank (Yuen).

A combination of Suzuki and Yuen, in view of the above teachings, would arrive only at a device in which a pagewidth printhead is used. The pagewidth printhead has an integrally arranged ink tank defining three ink reservoirs therein, and each of the three ink reservoirs spans a width of the ink tank.

The combination of Suzuki and Yuen, in view of the above teachings, would **not** arrive at an invention in which an elongate ink reservoir assembly defines at least three ink reservoirs, and each of the at least three ink reservoirs spans a width of the printing path. Applicant submits that an elongate ink reservoir assembly defining at least three ink reservoirs which each span a width of the printing path is not known from the cited references of Suzuki and Yuen.

Accordingly, it is respectfully submitted that the cited combination of Suzuki and Yuen does not prejudice the novelty and inventiveness of claims 1, 3 - 5, 8, and 10 .

#### **CLAIM 9**

All arguments as presented above in relation to claims 1, 3 - 5, 8 and 10 are to be considered as also submitted herewith in relation to claim 9. Moreover, the following further arguments are submitted in relation to claim 9.

Claim 9 is dependent from claim 3, and additionally recites that the guide assembly includes a first guide wall extending from a first inner wall, and a second guide wall extending from a second inner wall. The first and second guide walls extend towards each other from the first and second inner walls respectively and terminate at the elongate opening.

The Examiner contends that the combination of Suzuki and Yuen teach such a feature.

With reference to Fig. 3 of Yuen, the Examiner construes the two parallel and vertically extending wall-like structure (58) as the first and second guide walls. The Examiner construes the top most horizontally extending wall of the ink container (50) as the first inner wall. The Examiner fails to indicate which wall of the ink container (50) is construed as the second inner wall, however, Applicant assumes that the Examiner construes the bottom most horizontally extending wall of the ink container (50) as the second inner wall. The Examiner further construes a portion of the bottom most horizontally extending wall of the ink container (50) as the elongate opening.

Relying on the above construction of the ink container (50), the Examiner asserts that the left most vertically extending wall-like structure (58) is the first guide wall extending from a first inner wall (i.e. the top-most horizontally extending wall of the ink container), and that the right most vertically extending wall-like structure (58) is the second guide wall extending from a second inner wall (i.e. the bottom-most horizontally extending wall of the ink container).

Since the left most wall-like structure (58) extends from top to bottom, and the right most wall-like structure (58) extends from bottom to top, the Examiner assumedly further asserts that the two wall-like structures (58) extend “towards” each other, as required by claim 9.

Using a consistent application of the Examiner’s above construction/interpretation of the ink container (50) illustrated in Fig. 3 of Yuen, however, Applicant notes that the following fundamental deficiency exists.

Claim 9 requires that the first and second guide walls extend towards each other and terminate at the elongate opening. If the left most wall-like structure (58) is construed as a first guide wall extending from top to bottom, and the right most wall-like structure (58) is construed as a second guide wall extending towards the

first guide wall from bottom to top, Applicant points out that the right most wall-like structure (58) does not “terminate” at the elongate opening. Rather, since the right most wall-like structure (58) extends from bottom to top, it is clear that the right most wall-like structure (58) originates from the elongate opening, rather than terminates at the elongate opening.

No reasonable construction or interpretation of the ink container (50) can arrive at the recited arrangement of claim 9, requiring that: (1) the first and second guide walls extend towards each other, (2) that the first guide wall extend from a first inner wall, and (3) that the second guide wall extend from a second inner wall.

For example, if the left most wall-like structure (58) were instead construed as the second guide wall, and the right most wall-like structure (58) were instead construed as the first guide wall, the same deficiency would exist. Similarly, if the designations of the top most horizontally extending wall and the bottom most horizontally extending wall were swapped such that the bottom most horizontally extending wall was designated the first inner wall, and the top most horizontally extending wall was designated the second inner wall, the same deficiency would still exist.

The only construction/interpretation of the ink container (50) that would allow both the left most and right most wall-like structures (58) to both terminate at the elongate opening is if both wall-like structures were construed as extending from the top most horizontally extending wall to the bottom most horizontally extending wall. However, in this case, the requirement of claim 9 of the two guide walls extending towards each other would no longer be met.

In addition to the above, the Applicant notes that the construction of the ink container (50) relied upon by the Examiner in rejecting claim 9 is inconsistent with the construction relied upon by the Examiner in rejecting claim 4. Applicant submits that a proper application of Yuen in a 35 U.S.C. 103 combination to reject the claims of the present application must rely on a consistent interpretation of the teachings of Yuen. It is improper, for example, to assert that both wall-like structure (58) extend from top to bottom in the rejection of claim 4, and then

assert that one wall-like structure (58) extends from top to bottom while the other wall-like structure (58) extends from bottom to top when rejecting claim 9.

Similarly, the construction of the ink container (50) being relied upon by the Examiner in rejecting claim 9 is inconsistent with the construction relied upon by the Examiner in rejecting claim 4. For example, the Examiner's assertion of which elements of Yuen are the inner walls, and which elements are the guide walls differs from the rejection of claim 4 to the rejection of claim 9.

Accordingly, it is clear that the combination of Suzuki and Yuen, and in particular the teaching of Yuen being relied upon by the Examiner, fails to prejudice the novelty and inventiveness of claim 9.

**(2) REJECTION UNDER 35 U.S.C. 103(a) OVER SUZUKI (US 5,847,836) IN VIEW OF YUEN (US 7,347,863) IN VIEW OF OFFICIAL NOTICE SUPPORTED BY BALDWIN ET AL. (US 5,600,358)**

In the Final Office Action dated July 20, 2009, dependent claim 6 is rejected over the combination of Suzuki and Yuen and Official Notice supported by Baldwin et al. (US 5,600,358).

Applicant notes that this rejection has been identically raised in each of the Office Actions dated January 6, 2009, February 18, 2009, and July 20, 2009. Applicant has submitted arguments in response to each raising of this rejection, but the Examiner has failed to answer this material traversed by Applicant. In response to Applicant's submission of arguments to each raising of this rejection, the Examiner has merely raised the same rejection again in a subsequent Office Action, without further explanation as to why Applicant's submitted arguments were not persuasive.

The Examiner previously asserted that an answer to Applicant's arguments is not required since an alleged new grounds of rejection was raised in the Office Action of February 18, 2009. However, having reviewed the Office Action of February 18, 2009, Applicant points out that a new grounds of rejection has not in fact been

substantially raised in regards to claim 6. Claim 6 is still materially rejected in view of Official Notice supported by Baldwin et al.

All arguments as presented above in relation to claims 1, 3 - 5, 8 and 10 are to be considered also submitted herewith in relation to claim 6. Moreover, the following further arguments are submitted in relation to claim 6.

Claim 6 is dependent from claim 3, and recites that a wall of a cover member for covering the ink reservoir assembly defines a number of air inlet openings. Claim 6 further limits the air inlet openings as being openings that are treated to be hydrophobic.

The Examiner relies on Official Notice that air inlet openings that have been treated to be hydrophobic are well known and expected in the art. The Examiner submits Baldwin et al. in support of this Official Notice.

With reference to Baldwin et al., there is disclosed an arrangement in which a hydrophobic membrane is placed across one end of a passage. Applicant respectfully submits that the placing of a hydrophobic membrane across one end of a passage is not “treating” the opening so as to be hydrophobic, as would be understood by one of ordinary skill in the art.

Applicant refers to the Merriam-Webster online direction at <http://www.m-w.com> for a definition of the word “treat”, in which the definition is provided as:

- *to act upon with some agent especially to improve or alter < treat a metal with acid >*

The hydrophobic membrane described in Baldwin et al. cannot reasonably be construed as an “agent” acting upon the opening to improve or alter a characteristic of the opening. Whilst it may be considered that the membrane itself has been treated to be hydrophobic, the membrane does not itself “treat” the opening to make the opening hydrophobic.



Applicant believes that the recited arrangement of claim 6 is distinct from that described in Baldwin, in which a hydrophobic membrane is placed across one end of a passage. Placing a membrane across an end of a passage is respectfully submitted to be different to treating the opening with an agent so as to be hydrophobic.

Accordingly, it is respectfully submitted that the combination of Suzuki, Yuen and Official Notice as supported by Baldwin does not prejudice the inventiveness of claim 6.

## CLAIMS APPENDIX

1. A printhead assembly for a camera system having a chassis and a platen assembly that is mountable on the chassis, the platen assembly defining a printing path along which a print medium is passed, the printhead assembly comprising:

an elongate ink reservoir assembly defining at least three ink reservoirs for storing ink, each of the at least three ink reservoirs spanning a width of the printing path;

a guide assembly positioned in the ink reservoir assembly, the guide assembly defining at least three discrete ink paths facilitating fluidic communication between each of the at least three ink reservoirs and an outlet of the elongate ink reservoir assembly; and

at least one printhead integrated circuit positioned at the outlet of the elongate ink reservoir assembly, the at least one printhead integrated circuit substantially spanning a width of the printing path.

2. (Cancelled)

3. A printhead assembly as claimed in claim 1, wherein the ink reservoir assembly includes an elongate base member and an elongate cover member, the cover member having a roof wall, a pair of opposed side walls and a pair of spaced inner walls, the side walls and the inner walls depending from the roof wall and being generally parallel to each other and the base member having a floor and a pair of opposed end walls and defining an elongate opening in which the printhead integrated circuits are mounted, the guide assembly being interposed between lower ends of the inner walls and the floor.

4. A printhead assembly as claimed in claim 3, in which the guide assembly includes a pair of guide walls that extend from respective lower ends of the inner walls inwardly towards the elongate opening to define the three distinct ink paths that terminate at respective sets of inlet apertures of the printhead integrated circuits.

5. A printhead assembly as claimed in claim 3, in which the base member, the cover member and the guide assembly are molded of a plastics material.

6. A printhead assembly as claimed in claim 3, in which one of the end walls

defines a number of air inlet openings that are treated to be hydrophobic to permit the ingress of air into the ink reservoirs as ink is fed from the ink reservoirs and to inhibit the egress of ink.

7. (Canceled).

8. A camera system that includes a printhead assembly as claimed in claim 1.

9. A printhead assembly as claimed in claim 3, wherein the guide assembly includes a first guide wall extending from a first inner wall, and a second guide wall extending from a second inner wall, the first and second guide walls extending towards each other from the first and second inner walls respectively and terminating at the elongate opening.

10. A printhead assembly as claimed in claim 1, wherein the guide assembly spans a width substantially the same as that of the elongate ink reservoir, and the guide assembly is provided longitudinally adjacent to the elongate ink reservoir assembly.

## **EVIDENCE APPENDIX**

None

## RELATED PROCEEDINGS APPENDIX

None